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# Aging Friendly Technology for Health and Independence

8th International Conference on Smart Homes  
and Health Telematics, ICOST 2010  
Seoul, Korea, June 22-24, 2010  
Proceedings

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Library of Congress Control Number: 2010928341

CR Subject Classification (1998): C.3, C.2, I.2, H.4, H.5, I.4

LNCS Sublibrary: SL 3 – Information Systems and Application, incl. Internet/Web and HCI

ISSN 0302-9743

ISBN-10 3-642-13777-6 Springer Berlin Heidelberg New York

ISBN-13 978-3-642-13777-8 Springer Berlin Heidelberg New York

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India  
Printed on acid-free paper 06/3180

## Preface

We are living in a world full of innovations for the elderly and people with special needs to use smart assistive technologies and smart homes to more easily perform activities of daily living, to continue in social participation, to engage in entertainment and leisure activities, and to enjoy living independently. These innovations are inspired by new technologies leveraging all aspects of ambient and pervasive intelligence with related theories, technologies, methods, applications, and services on ubiquitous, pervasive, AmI, universal, mobile, embedded, wearable, augmented, invisible, hidden, context-aware, calm, amorphous, sentient, proactive, post-PC, everyday, autonomic computing from the engineering, business and organizational perspectives. In the field of smart homes and health telematics, significant research is underway to enable aging and disabled people to use smart assistive technologies and smart homes to foster independent living and to offer them an enhanced quality of life.

A smart home is a vision of the future where computers and computing devices will be available naturally and unobtrusively anywhere, anytime, and by different means in our daily living, working, learning, business, and infotainment environments. Such a vision opens tremendous opportunities for numerous novel services/applications that are more immersive, more intelligent, and more interactive in both real and cyber spaces.

Initiated in 2003, the International Conference on Smart Homes and Health Telematics (ICOST) has become the premier forum for researchers, scientists, students, professionals, and practitioners to discuss and exchange information and ideas on the current advances in enabling technologies coupled with evolving care paradigms to allow the development of novel applications and services for improving the quality of life for aging and disabled people both inside and outside of their homes. Each year ICOST has a specific theme. The theme of ICOST 2003 was “Independent Living for Persons with Disabilities and Elderly People.” The theme for ICOST 2004 was “Towards a Human-Friendly Assistive Environment.” ICOST 2005 focused on “From Smart Homes to Smart Care.” For ICOST 2006, it was “Smart Homes and Beyond” and ICOST 2007 had the theme of “Pervasive Computing Perspectives for Quality of Life Enhancement.” The theme of ICOST 2008 was “Gerontechnology: Enhancing the Quality of Life for Rural Elders.” Last year the theme of ICOST 2009 was “Ambient Assistive Health and Wellness Management in the Heart of the City,” which sought to address the latest approaches and technical solutions in the area of smart homes, health telematics, and emerging enabling technologies with a special emphasis on presenting the latest results in the successes of real deployment of systems and services.

This year the conference was organized under the theme of “Aging Friendly Technology for Health and Independence.” At present, the absolute number and proportion of the elderly population has been increasing globally, and especially very rapidly in several countries, while the numbers of human resources that could care for the elderly have been significantly diminishing. Due to this, a burden on the elderly and on

society has been pressing. Thus, information and communication technology (ICT) is a promising and pioneering field that mitigates the burden in everyday life settings and broadens beneficial opportunities. It has been expected that various technologies ranging from simple ICT to complex ICT, fixed service to mobile service, services for relatively healthy elderly to services for frail elderly are to be extended and the technology is also expected to be developed in a more ambient and user-friendly way. This ICT growth would contribute to enhancing people's life quality by being merged into diverse life environments. Moreover environmental characteristics are also considered very important in accommodating ICT and producing the synergistic effects. ICT deals with major alternatives to secure the quality of life of the elderly who can make up the majority of our society in the "aged era." In this context, this year the theme was extended to three subthemes: Smart Home and Village, Health Telematics and Healthcare Technology (including a medical part), and Aging Friendly and Enabling Technology.

We are pleased to present, gathered in these proceedings, the papers presented at the conference, which were stringently refereed and carefully selected by a Program Committee of 39 internationally renowned researchers. We would like to thank the members of the Program Committee and the authors for shaping this conference.

We are very grateful to the Scientific Committee members for their dedication to improving the scientific quality and research value of ICOST 2010. We would also like to thank the Local Organizing Committee and the publicity team for the successful organization of an internationally reputable event. We are very grateful that all these people and others behind the scenes accepted to put their academic and professional experience as well as their reputation of excellence at the service of the success of this event. We hope that we have succeeded in disseminating new ideas and results that stem from the presentations and discussions.

June 2010

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